IN THE CLAIMS

1. (currently amended) A parallel arithmetic apparatus, comprising:

a plurality of pairs of devices, each pair including recording means for recording ~~arithmetical~~ arithmetic elements to be operated on and operating means for performing sum-of-products operations ~~based~~ on the ~~arithmetical~~ arithmetic elements recorded in ~~said~~ the recording means~~,~~; and

~~wherein one of said recording means of all pairs is selected and~~ selecting means inserted between the recording means and the operating means in a first pair for inputting ~~said~~ the arithmetic ~~arithmetical~~ elements recorded in the ~~selected~~ recording means of a selected pair to the operating means of ~~said~~ the selected pair ~~is inserted between the recording means and operating means of any one pair~~.

2. (currently amended) The parallel arithmetic apparatus according to claim 1, further comprising:

~~wherein~~ temporary recording means inserted between the recording means and the operating means in a second pair different from the first pair for temporarily recording ~~said~~ the arithmetic ~~arithmetical~~ elements recorded in the recording means of the second ~~a~~ pair ~~in which said selecting means is not inserted is inserted between the recording means and operating means of said pair,~~; ~~and~~ wherein

~~said~~ the selecting means is adapted ~~constructed in such a way as~~ to input the arithmetic ~~arithmetical~~ elements recorded in the ~~said~~ temporary recording means to the ~~said~~ operating means of the second pair when the second pair is the selected pair ~~when the recording means of the pair in which said selecting means is not inserted is selected~~.

3. (currently amended) The parallel arithmetic apparatus according to claim 1, wherein ~~said~~

the recording means of each pair ~~all pairs record~~ records~~,~~ ~~during a matrix operation,~~ a first ~~arithmetical~~ arithmetic element to be subjected to ~~said~~ a matrix operation~~,~~ and a second arithmetic element ~~during a vector inner product operation, a second arithmetical element~~ to be subjected to an ~~said~~ inner product operation, and

~~said~~ the selecting means is adapted ~~constructed~~, during ~~said~~ the matrix operation, ~~in such a way as~~ to input ~~said~~ the first arithmetic ~~arithmetical~~ element from the recording means of the ~~own~~ selected pair to the operating means of the ~~own~~ selected pair and, during ~~said~~ the inner product operation, ~~in such a way as~~ to select the ~~said~~ recording means of ~~all~~ each pair ~~pairs~~ one by one in a round-robin fashion and input ~~said~~ the second arithmetic ~~arithmetical~~ element from each ~~the selected~~ recording means to the operating means of the selected ~~the own~~ pair.

4. (currently amended) The parallel arithmetic apparatus according to claim 1, wherein, for each of the pairs, ~~said~~ the operating means in the pair performs an operation with a content independently assigned to the pair ~~said pair~~ using ~~said arithmetical~~ the arithmetic elements recorded in the recording means of ~~said~~ the pair.

5. (currently amended) The parallel arithmetic apparatus according to claim 4, wherein ~~said~~ the operation is an operation associated with any one of four-dimensional coordinate components.

6. (currently amended) A parallel arithmetic apparatus that selectively performs a matrix operation and a vector inner product operation, comprising:

a plurality of recording means for recording, during the ~~said~~ matrix operation, a first arithmetic ~~arithmetical~~ element to be subjected to ~~said~~ the matrix operation and for recording, during ~~said~~ the inner product operation, a second arithmetic ~~arithmetical~~ element to be subjected to the ~~said~~ inner product operation;

a plurality of operating means forming a one-to-one correspondence with the ~~said~~ plurality of recording means for performing, during the ~~said~~ matrix operation, a sum-of-products operation in which ~~by~~ each operating means ~~inputting~~ inputs the ~~said~~ first arithmetic ~~arithmetical~~ element recorded in the corresponding recording means, and for performing, during the ~~said~~ inner product operation, a sum-of-products operation in which ~~by~~ a predetermined one of the plurality of operating means inputs ~~inputting~~ the ~~said~~ second arithmetic ~~arithmetical~~ element recorded in ~~all~~ each of the recording means; and

selecting means for selecting, during the ~~said~~ matrix operation, ~~the~~ a first recording means corresponding to the ~~said~~ predetermined operating means and inputting a first arithmetic ~~arithmetical~~ element recorded in the first ~~this~~ recording means to ~~in~~ the ~~said~~ predetermined operating means, and for selecting, during the ~~said~~ inner product operation, the ~~said~~ plurality of recording means one by one in a round-robin fashion and inputting ~~a~~ the second arithmetic ~~arithmetical~~ element recorded in each of the ~~selected~~ recording means to the ~~in said~~ predetermined operating means.

7. (currently amended) The parallel arithmetic apparatus according to claim 6, wherein ~~said~~ the first and second arithmetic elements are ~~arithmetical element is~~ expressed with a floating point number and the plurality of ~~said~~ operating means ~~is~~ are constructed ~~so as~~ to perform the ~~a~~ sum-of-products operation ~~of the~~ on floating point numbers ~~number~~.

8. (currently amended) An entertainment apparatus that performs image processing on an entertainment image by performing a matrix operation with regard to coordinates expressing a position and a shape of an object and performing an inner product operation with regard to vectors used to express an image of ~~said~~ the object, the apparatus comprising:

a plurality of registers that record ~~records~~, during ~~said~~ the matrix operation, a first arithmetic ~~arithmetical~~ element subjected to ~~said~~ the matrix operation, and that record ~~records~~, during ~~said~~ the inner product operation, a second arithmetic ~~arithmetical~~ element subjected to ~~said~~ the inner product operation;

a plurality of sum-of-products operators forming a one-to-one correspondence with ~~said~~ the plurality of registers that perform ~~performs~~, during ~~said~~ the matrix operation, a sum-of-products operation in which ~~by~~ each sum-of-products operator inputs ~~inputting said~~ the first arithmetic ~~arithmetical~~ element recorded in the corresponding register, and that perform ~~performs~~, during ~~said~~ the inner product operation, a sum-of-products operation in which ~~by~~ a predetermined one of the sum-of-products operators inputs ~~inputting said~~ the second arithmetic ~~arithmetical~~ element recorded in ~~all~~ each of the registers; and

a selector that selects, during ~~said~~ the matrix operation, a register corresponding to ~~said~~ the predetermined sum-of-products operator and inputs the ~~a~~ first arithmetic ~~arithmetical~~ element recorded in the selected ~~this~~ register to ~~in said~~ the predetermined sum-of-products operator, and that selects, during ~~said~~ the inner product operation, ~~said~~ the plurality of registers one by one in a round-robin fashion and inputs, for each of the registers, the ~~a~~ second arithmetic ~~arithmetical~~ element recorded in the ~~selected~~ register to ~~in said~~ the predetermined sum-of-products operator.

9. (currently amended) An entertainment apparatus that performs image processing on an entertainment image by carrying out a matrix operation between a matrix and coordinate values to perform a coordinate transformation of coordinates expressing ~~the~~ a position and a shape of an object and carrying out an inner product operation between a normal vector oriented in ~~the normal~~ a direction normal to ~~of~~ the surface of ~~said~~ the object and a position vector of a light source to determine the display mode of the surface of ~~said~~ the object, the apparatus comprising:

a plurality of registers that record ~~records said~~ the coordinate values and component values corresponding to any one row of ~~said~~ the matrix during ~~said~~ the matrix operation, and that record ~~records said~~ the normal vector and component values corresponding to any one component of ~~said~~ the position vector during ~~said~~ the inner product operation;

a plurality of sum-of-products operators forming a one-to-one correspondence with ~~said~~ the plurality of registers that carry out a sum-of-products operation during ~~said~~ the matrix operation in which ~~by~~ each sum-of-products operator inputs ~~inputting said~~ the coordinate values recorded in the

corresponding register and component values corresponding to ~~said~~ the one row of ~~said~~ the matrix, and that carry out a sum-of-products operation during ~~said~~ the inner product operation in which a ~~by~~ predetermined one of the sum-of-products operators inputs ~~inputting said~~ the normal vector recorded in ~~all~~ each of the registers and component values of ~~said~~ the position vector;

a selector that selects, during ~~said~~ the matrix operation, a register corresponding to ~~said~~ the predetermined sum-of-products operator and inputs ~~said~~ the coordinate value recorded in the selected ~~this~~ register and the component values corresponding to ~~said~~ the one row of ~~said~~ the matrix to ~~said~~ the predetermined sum-of-products operator, and that selects, during ~~said~~ the inner product operation, ~~said~~ the plurality of registers one by one in a round-robin fashion and inputs, for each of the registers, the component values of ~~said~~ the normal vector and ~~said~~ the position vector recorded in the ~~selected~~ register to ~~in said~~ the predetermined sum-of-product operator.

10. (canceled)

11. (canceled)

12. (canceled)

13. (new) The parallel arithmetic apparatus of claim 1, wherein the first pair is the selected pair.